



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,712	12/05/2005	Patrick Joseph Collins	8830-376US1	1822
23973 7590 06/23/2009 DRINKER BIDDLE & REATH ATTN: INTELLECTUAL PROPERTY GROUP ONE LOGAN SQUARE 18TH AND CHERRY STREETS PHILADELPHIA, PA 19103-6996				
EXAMINER				
FIGUEROA, JOHN J				
ART UNIT		PAPER NUMBER		
1796				
MAIL DATE		DELIVERY MODE		
06/23/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/559,712

**Applicant(s)**

COLLINS, PATRICK JOSEPH

**Examiner**

John J. Figueroa

**Art Unit**

1796

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6, 7, 10, 12-16, 18-23, 37, 40 and 41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) Z is/are allowed.
- 6) ☒ Claim(s) 6, 10, 12-16, 18-23, 37, 40 and 41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. The 35 U.S.C. §102(b) rejection of claims 1, 3-5 and 36 as being anticipated by USPN 5,290,768 to Ramsay et al. (hereinafter 'Ramsay') previously made of record in item 2 on page 2 of the Office Action dated December 24, 2008 (hereinafter 'OA') has been withdrawn in view of Applicant's cancellation of the rejected claims in the amendment filed with the response to OA on March 23, 2009 (hereinafter 'Response').
2. The 35 U.S.C. §103(a) rejection of claims 14-16 and 18-23 as unpatentable over Ramsey in view of USPN 5,417,287 to Smith et al. (hereinafter 'Smith') of record in item 5 on page 3 of OA has been withdrawn in view of Applicant's amendment to independent claim 10 in Response, which limits the recited substance to be a gel having a dynamic viscosity of more than 1000 Pa.S.
3. The indication of allowable subject matter previously presented in items 6 and 7 on page 4 of OA has been withdrawn.

### ***Claim Rejections - 35 USC § 103***

4. **The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**
5. Claims 10, 12, 13, 37, 40 and 41 are rejected under 35 U.S.C. 103(a) as unpatentable over USPN 4,941,773 to Vergow et al. (hereinafter 'Vergow').

Vergow discloses heat insulation in the form of gelling material for pipeline bundles under water, and a method of filling space within the pipeline bundles with heat insulation, wherein the gelling material fills the space between one or more gas/liquid conducting lines and a surrounding carrier pipe with a crude oil fraction, wherein said oil fraction is viscosified in the bundle on or near the destined location, and wherein the dynamic viscosity after gellation is preferably between 10 and 1,000 Pa.S. (Abstract; Fig. 1 and 2; col. 2, line 48 to col. 3, line 58)

Vergow further discloses that gelling chemicals suitable for crude-oil fractions include condensation products of penta- to hepta-alcohols with an aromatic monoaldehyde, such as benzaldehyde, benzylidene or sorbitols. (Col. 2, lines 16-28)

Although Vergow discloses the dynamic viscosity for the gelled substance to *preferably* be between 10 and 1,000 Pa.S after gellation, it does not disclose a sample of the gelled substance to have dynamic viscosity of *greater* than 1,000 Pa.S. However, because the claimed range for the dynamic viscosity is very close to (touches) the outer end point of the range for the dynamic viscosity disclosed in Vergow, a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.). "[A] prior art

reference that discloses a range encompassing a somewhat narrower claimed range is sufficient to establish a prima facie case of obviousness." In re Peterson, 315 F.3d 1325, 1330, 65 USPQ2d 1379, 1382-83 (Fed. Cir. 2003) See also In re Harris, 409 F.3d 1339, 74 USPQ2d 1951 (Fed. Cir. 2005) (claimed alloy held obvious over prior art alloy that taught ranges of weight percentages overlapping, and in most instances completely encompassing, claimed ranges; furthermore, narrower ranges taught by reference overlapped all but one range in claimed invention).

In addition, it would have also been obvious to vary the amount of gel along the length of the tube (vary thermal/insulation properties as recited in claim 13) to attain a preferred amount of insulation in accordance with the varying temperature areas along the length of the pipe and, thereby, provide a more cost-efficient pipe insulation. Moreover, the insulated pipe in Vergow should have the hydrostatic pressure properties recited in claim 12 due to the insulated pipe in Vergow encompassed by that recited in the present claims

Thus, the present claims are unpatentable over Vergow.

6. Claims 6, 14, 16, 18-20, 22, 23, 37, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vergow in view of USPN 5,571,315 to Smith et al. (hereinafter 'Smith'315") or USPN 6,297,201 B1 to Geib (hereinafter 'Geib').

Vergow was discussed above in the instant action. Vergow does not disclose the gelling material comprising orthophosphate or a ferric crosslinking agent.

However, Smith'315 teaches hydrocarbon gels for use in fracturing applications containing a gelling agent that provides excellent fracturing results, said gelling agent

comprising a ferric salt (transition metal salt) and orthophosphate esters. (Abstract; col. 2, line 40 to col. 3, line 34; col. 3, line 44 to col. 4, line 16) Among the advantages of using this gelling agent is its effectiveness in applications involving large amounts of water (subsea applications) and its stability at broad pH ranges and temperatures (insulation). (Col. 3, lines 1-7; col. 5, lines 10-17; Table II) The composition in Smith'314 can further contain/transport<sup>47</sup> proppants (microspheres) to assist in fracturing and sealing. (Col. 1, lines 42-46)

Similarly, Geib teaches compositions and methods for gelling liquid hydrocarbons by adding a composition including phosphate ester, a crosslinking agent, and an enhancer to the hydrocarbon fracture, wherein the enhancer can be an oxyalkylated amine; the crosslinking agent can be a ferric compound; and the phosphate ester can be orthophosphate ester, and wherein the gel-forming compositions provides enhancements in fracturing formation applications, such as providing more rapid gellation and greater viscosities. (Abstract; col. 3, lines 58-67; col. 4, lines 19-34; col. 4, line 35 to col. 5, line 15) The composition in Smith'314 can further contain proppants (microspheres) to assist in fracturing and sealing. (Col. 1, lines 37-48; col. 16, lines 36-51)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time that the claimed invention was made to include Smith'315' or Geib's gelling agent comprising a ferric salt and orthophosphate ester in the gelled-insulation material disclosed in Vergow. It would have been obvious to one skilled in the art to incorporate said gelling agent to attain a resultant gelled insulation material that is effective in

applications involving large amounts of water (subsea production) and in harsh environmental conditions as taught by Smith'315 or Geib.

Thus, the instant claims are unpatentable over Vergow and either Smith'315 or Geib.

7. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vergow in view of USPN 6,978,825 B1 to Baylot (hereinafter 'Baylot').

Vergow was discussed above in the instant action. Vergow does not disclose the gelling material components to be encapsulated in wax.

However, Baylot teaches adding incompressible material (microspheres), such as glycols; bitumens; tars; waxes; and other fatty bodies solid, at ambient temperature to an outer/internal envelope pipe coating to provide enhanced heat insulation to pipe bundles used in underwater depth operations. (Abstract; Figs. 1-3; col. 5, lines 15-54; Example 1)

Therefore, it would have also been obvious to one in the art to encapsulate the gelling insulation material used in Vergow's pipe bundle in, for example, wax (incompressible microspheres) to protect it from harsh environments due to its effective heat insulation properties as taught by Baylot.

Thus, the claims are unpatentable over Vergow and Baylot.

8. Claims 15 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vergow in view 'Smith'315 or Geib, as applied to claims 10 and 14 above, and further in view of Baylot.

Vergow, Smith'315 and Geib were discussed above in the instant action.

Vergow does not disclose the gelling material components to be encapsulated in wax.

Baylot was discussed above in the immediately preceding paragraph. As discussed above, Baylot teaches adding incompressible material, such as wax, to a pipe coating to provide enhanced heat insulation in underwater depth operations.

(Abstract; Figs. 1-3; col. 5, lines 15-54; Example 1)

Therefore, it would have also been obvious to one in the art to encapsulate Vergow and (Smith'315 or Geib)'s gelling insulation material used in a pipe bundle with, for example wax, to protect it from said harsh environment due to its effective heat insulation properties.

Thus, the present claims are unpatentable over Vergow and Baylot and either Smith'315 or Geib.

***Allowable Subject Matter***

9. Claim 7 is allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: Although Smith'315 and Geib teach a hydrocarbon producing pipe/conduit comprising the recited insulation material in independent claim 6, the prior art of record does not teach or suggest adding microspheres enclosing hydrocarbon gas to said insulation material used in the prior art's methods of insulating subsea structure applications.



***Response to Arguments***

***The 35 U.S.C. 102 Rejection over Ramsey (item 2 of OA)***

11. Applicant's arguments filed in Response traversing the captioned 35 U.S.C. 102(b) rejection as anticipated by Ramsay have been considered but deemed moot due to the withdrawal of this 102 anticipation rejection in view of Applicant's amendment in Response cancelling the rejected claims.

***The 35 U.S.C. 103 Rejection over Ramsay and Smith (item 5 of OA)***

12. Applicant's arguments in Response traversing the captioned 35 U.S.C. 103 rejection have been considered but have been rendered moot due to the withdrawal of this obviousness rejection in view to Applicant's amendment in Response amending independent claim 10 to limit the substance to a gel having a dynamic viscosity of more than 1000 Pa.S.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (571)272-8916. The examiner can normally be reached on Monday-Thursday 8:00-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James J. Seidleck/  
Supervisory Patent Examiner, Art Unit 1796

JJF/JS